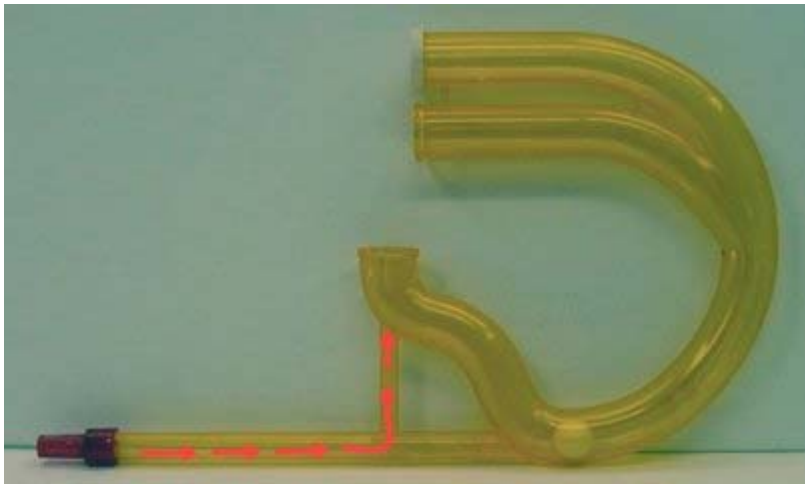
Question #322

The unlikely looking contraption seen in the photograph below is the subject of the question for this week.



When you blow into the mouthpiece, marked in the photograph, the air bends and goes up vertically through the opening, as shown by the arrows superposed on the photograph of the tube. A styrofoam ball placed into the curved tube can leave the tube via either of two routes, shown in an mpeg video by clicking your mouse on the photograph above. Notice that the tube at the top separates, with two openings, the upper of which is closed with a white plastic cap.

So here is the question: What will happen to the styrofoam ball when it is positioned on the bottom of the tube, as seen in the photograph, and you begin to blow air into the tube through the mouthpiece?

The foam ball will:

- (a) stay where it is in the bottom of the tube.
- (b) oscillate back and forth about its equilibrium position in the bottom of the tube.
- (c) exit the tube through the upper opening and fall to the floor.
- (d) exit the tube through the lower opening and fall to the floor.
- (e) exit the tube through the lower opening and re-enter the tube through the upper opening.
- (e) exit the tube through the upper opening and re-enter the tube through the lower opening.
- (g) become trapped in the air emerging from the vertical tube where the arrows end.

You must justify any silly behavior that you might predict by calling upon actual physics principles.

Click here for Answer #322 after October 6, 2008.

Question of the Week

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For questions and comments regarding the *Question of the Week* contact Dr. Richard E. Berg by e-mail or using phone number or regular mail address given on the Lecture-Demonstration Home Page.